



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION:	Trent 1000-H3	BYPASS RATIO:	9.3
UNIQUE ID NUMBER:	02P23RR130	PRESSURE RATIO (π_{co}):	40.3
COMBUSTOR:	Phase5 Tiled		
ENGINE TYPE:	TF	RATED THRUST (F_{oo}) (kN):	287.1

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F _{oo} (g/kN) or SN	0.0	12.0	54.2	16.4
AS % OF ORIGINAL LIMIT	0.0	10.2	44.9	92.4
AS % OF CAEP/2 LIMIT (NO _x)			56.1	
AS % OF CAEP/4 LIMIT (NO _x)			61.8	
AS % OF CAEP/6 LIMIT (NO _x)			68.0	
AS % OF CAEP/8 LIMIT (NO _x)			76.5	

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

DATA STATUS

- PRE-REGULATION
 x CERTIFICATION
 - REVISED (SEE REMARKS)

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES
 x DEDICATED ENGINES TO PRODUCTION STANDARD
 - OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
 (ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
 - OUT OF PRODUCTION (DATE: -)
 - OUT OF SERVICE (DATE: -)

MEASURED DATA

MODE	POWER SETTING (%F _{oo})	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO _x	
TAKE-OFF	100	0.7	2.108	0.00	0.43	42.14	11.1
CLIMB OUT	85	2.2	1.732	0.00	0.38	32.83	13.8
APPROACH	30	4.0	0.598	0.00	0.83	13.04	7.7
IDLE	7	26.0	0.232	0.00	8.39	5.29	2.2
LTO TOTAL FUEL (kg) or EMISSIONS (g)			823	0	3286	15026	-
NUMBER OF ENGINES				8	8	8	8
NUMBER OF TESTS				18	18	18	18
AVERAGE D _p /F _{oo} (g/kN) or AVERAGE SN (MAX)				0.0	11.4	52.3	14.7
SIGMA (D _p /F _{oo} in g/kN, or SN)				0.0	2.1	0.9	2.0
RANGE (D _p /F _{oo} in g/kN, or SN)				0.0	7.4-14.1	50.9-53.47	11.4-16.7

ACCESSORY LOADS

POWER EXTRACTION	0	(kW)	AT	-	POWER SETTINGS
STAGE BLEED	0	(% CORE FLOW)	AT	-	POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.9-102.1
TEMPERATURE (K)	280.4-303.5
ABS HUMIDITY (kg/kg)	0.00308-0.01917

FUEL

SPEC	
H/C	1.92
AROM (%)	16.89

MANUFACTURER: Rolls-Royce plc
 TEST ORGANIZATION: Rolls-Royce plc
 TEST LOCATION: Derby
 TEST DATES: 24/09/2009-28/08/2019

NO_x REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

REMARKS

1. Representative of Trent 1000-TEN engines
2. EDNS01000935986

Compliance with Fuel Venting requirements:

x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)